

1849, on the day of the "Feast of the Conception," at the Salini, by Mr. Ardouino, who still remembers the occurrence*. The specimen of *Cygnus* alluded to (Ibis, 1864, p. 155) was doubtless the young of *C. olor*, a species already registered as visiting Malta (Ibis, 1869, p. 248). It is more than probable that *C. ferus* has also occurred here; but I have no authentic information of the fact. There is an example of *C. olor* in the Malta University Museum nearly pure white, but with scarcely any appearance of the frontal knob. I think the occurrence of *Alauda cristata* (Ibis, 1864, p. 60; 1865, p. 464), even as an accidental visitor, is very doubtful, also *Podiceps cornutus* (Ibis, 1864, p. 157), as I have never myself seen a specimen of either. Whilst on the subject of corrections, I may state that the alleged specimens of the American Gull (*Larus atricilla*) taken in Sicily, and preserved in the Palermo University Museum (Ibis, 1869, p. 255), do not belong to that species. During a recent visit to Palermo I had an opportunity, through the kindness of the learned professor in charge of the zoological department, of examining them. They are unmistakably examples of the Adriatic (or, as it is better called, the Mediterranean) Black-headed Gull. It may be taken for granted that the American species does not occur in the Mediterranean; and the allusions of authors to it, Yarrell among others, doubtless refer to *Larus melanocephalus*.

XXVIII.—On rare or little-known Limicolæ.

By J. E. HARTING, F.L.S., F.Z.S.

(Plate IX.)

The Genus RECURVIROSTRA.

So long ago as 1863, in Wiegmann's 'Archiv' for that year, p. 131, Messrs. Philippi and Landbeck described an Avocet from the Andes, which they named *Recurvirostra andina*, and

* [Since this paper was sent to the printers Mr. Wright has sent us the fragments mentioned above. On comparing them with specimens in Mr. Dresser's collection, we are able to state that they belong, without doubt, to a young individual of *S. pomatorhinus*.—ED.]

which was said to differ materially from the only species of the genus then known to inhabit the New World. Their description and measurements, to which I shall presently refer, left little to be desired save the acquisition of further specimens and the information which other observers might supply as to the geographical range and habits of the bird. Strange to say, although ten years have elapsed since it was brought to the notice of ornithologists, no further observations, so far as I am aware, have been published in regard to this interesting species.

An opportunity has just been afforded me, through the kindness of Mr. Sclater, of examining a carefully finished coloured drawing by Herr Landbeck of the identical specimen from which the original description was taken. In compliance with his request that I would examine and report upon the validity of the species in question, I beg to offer the following remarks:—

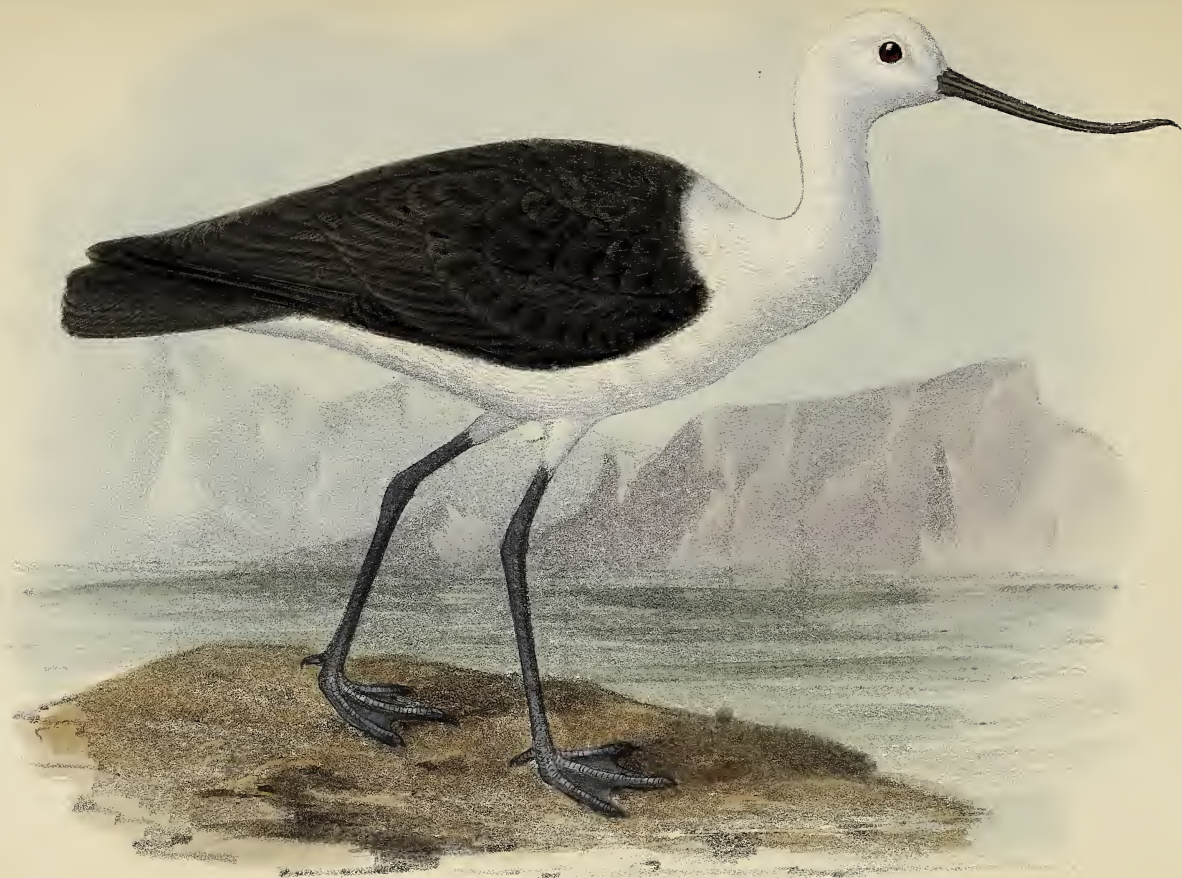
On looking at the plate, which is here faithfully reproduced (Plate IX.), the first thing which attracts attention is the white head; a second peculiarity is the absence of any white bar upon the wing, so conspicuous in the well-known species *R. avocetta* and *R. americana*; and one cannot fail to notice also that the tail-feathers, instead of being pure white, like those of its congeners, are of the same colour as the back and wings.

It is thus particularly described by its discoverers:—

“Head and neck white; mantle, wings, and tail black; feet bluish grey.

“Length from bill to end of tail 1 foot 6 inches 9 lines; bill 3·2 inches; tail 4; wing from carpus 9·6; bare tibia 1·3; tarsus 3·4; middle toe 1·7; outer toe 1·5; inner toe 1·2; hind toe ·3.

“The wings do not quite reach to the end of the tail. The tibia is bare for 1·3 inch. The bill is horn-black at the extremity, graduating into horn-brown. Iris bright red. Tarsus bluish grey; claws black. Head, neck, breast, belly, under wing- and under tail-coverts, lower part of back and rump, flanks, and thighs pure snowy white. Upper part of back,



CL Landbeck pinx.
JG Keulemans lith.

RECURVIROSTRA ANDINA.

M&N Hanhart imp.

shoulders, wings, tail, and upper tail-coverts brownish black ; the greater wing-coverts and primaries with greenish black reflections, but without any white."

On reading this description, it seemed just possible that the bird in question might be immature ; and as I remembered to have noticed in other species, and in some species of the allied genus *Himantopus*, that the tail-feathers are, for the most part, grey in the young, but become pure white in the adult, a careful comparison was necessary before any satisfactory conclusion could be arrived at.

The result of this comparison has satisfied me that the bird described by Herren Philippi and Landbeck must be regarded as a valid and highly interesting species.

The genus *Recurvirostra* is a very restricted one ; and it is not difficult, therefore, to point out the distinguishing characters of the four species of which it is composed, and show in what respects *R. andina* differs from its congeners.

Recurvirostra avocetta, which is the most widely distributed of all (being found, as I shall presently show, throughout the greater part of Europe, Asia, and Africa), is at once to be distinguished by its black crown and nape, present at all seasons, in young as well as in old birds, although of a paler or browner hue in the case of the former. This peculiarity is shared by no other species of Avocet. In the distribution of colour about the back and wings it resembles the New-World species, *R. americana* ; that is to say, the scapulars, wing-coverts, and primaries are black, while the interscapulars and secondaries are pure white. The closed wing has thus the appearance of being crossed by two very conspicuous white bars. This distribution of colour is indicated at a very early age, even in the young bird incapable of flight, the parts which in the adult are black being in the young of a mealy brown hue. The tail and tail-coverts are at all seasons white.

From this species *R. andina* differs in having a white head, an absence of white upon the wing, and the tail and tail-coverts brownish black.

In *R. americana* the crown and nape are never at any season

black, being in summer ferruginous or sandy red (which colour extends to the whole of the neck and the upper part of the breast), in autumn grey, more especially in birds of the year, and in winter pure white. In the winter plumage therefore it resembles *R. andina* in the colour of the head, but differs from it in the colour of the wings, which resemble those of *R. avocetta*, save that the white secondaries are so nearly obscured by the dark wing-coverts that the closed wing presents the appearance of being crossed by only one white bar (and that a narrow one) instead of two. The bill is much less recurved and less attenuated at the extremity than in any of the other species. The tarsus is longer than in *R. avocetta* and *R. andina*; but the latter has a longer wing.

R. novæ-hollandiæ, inhabiting Australia and New Zealand, may at once be distinguished by the rich chestnut colouring of the whole of the head and upper portion of the neck, which is retained, apparently, throughout the year, though of a paler hue in winter. The coloration of the wings is much the same as in the last-named species, save that there is much less black upon the scapulars, and these black feathers do not meet to form one broad mesial patch in the centre of the back as in *R. avocetta* and *R. americana*.

The legs and feet in all the species are of a delicate bluish grey, the soles of the feet tinged with buff. By some authors they have been described as black; but this was in consequence of the descriptions having been taken from dried skins. The bill is of the colour and appearance of whale-bone; the irides bright red or reddish hazel.

In structure *Recurvirostra* closely resembles *Numenius* and *Totanus*. The tongue is very short in proportion to the length of the bill, slightly emarginate at the base, with a few conical papillæ, slender, tapering to a point, and flattened above. On the palate are two longitudinal series of blunt papillæ. The posterior aperture of the nares is linear, nearly an inch in length, papillate on the edges. The œsophagus is between seven and eight inches in length, and inclines to the right side. In diameter it is about half an inch at the upper part, dilating to about three quarters of an inch at its entrance

into the thorax. The trachea is about six inches and a half long, and a quarter of an inch in diameter, its rings very thin and unossified, and the bronchi short. The proventriculus is an inch long, and half an inch in diameter; the gizzard of an oblong shape, about an inch and a half long and nearly an inch wide, the epithelial lining tolerably thick and hard. The intestine is between three and four feet long, and about the third of an inch in diameter; the rectum two inches long, and the cæca about two and a half and two and three-quarter inches respectively.

The gizzard has generally been found to contain small shells and particles of grit, remains of small crustacea, worms, beetles, and sometimes vegetable fibre.

Various details have been published from time to time of what may be termed the better-known species of Avocets; but these details are scattered throughout a multitude of different volumes, and reference to them involves no little time and trouble.

The species, however, are so few in number that the present seems a fitting opportunity for bringing together some of the more important observations which have been published concerning them.

Linnæus thus describes the genus:—

“*RECURVIROSTRA*. Rostrum depresso-planum, subulatum, recurvatum, acuminatum, apice flexili. Pedes palmati, tridactyli.”

He was mistaken, however, in writing “tridactyli,” as in all the known species there is a hind toe present.

RECURVIROSTRA AVOCETTA, Linnæus.

Recurvirostra avocetta, Linn. Syst. Nat. i. p. 256 (1766), et auct. recent.

Recurvirostra europæa, Dumont, Dict. des. Sc. Nat. iii. p. 339 (1816).

Recurvirostra tephroleuca, Vieillot, Enc. Méth. p. 360 (1823).

Recurvirostra halebi, Brehm, Vogelf. p. 325.

Recurvirostra sinensis, Swinhoe, Ibis, 1867, p. 400.

Hab. Europe from 60° N. lat. to the Mediterranean; Asia from Siberia to Cochin China and Ceylon; Africa to the Cape.

Diagn. *R. alba*; pileo, collo postico, scapularibus ex parte, tectricibus alarum, et remigibus primariis nigris; rostro nigro; iride rufescenti-fusca; pedibus cæruleis; long. tot. circa 17·5 poll., rostr. 3·2–3·5, alæ 8·5–9·0, tib. nud. 1·5–1·75, tars. 3–3·4, dig. med. cum ung. 1·5–1·75.

From what has been said above, it will be seen that this species has a very extensive geographical range, more so, in fact, than any other of the genus. In Europe it is pretty generally distributed but is not found very far north, perhaps not further than the 60th parallel of N. latitude, although breeding in Denmark, the Isle of Sylt, Schleswig Holstein, and the north of Germany and Holland. It was formerly a regular summer visitant to England; but the general cultivation of waste lands, and the drainage of extensive pieces of water (the natural consequence of an increasing population and an improved system of agriculture), have gradually banished it from its former haunts. The neighbourhood of Rye, in Sussex, Romney Marsh, in Kent, Salthouse, in Norfolk, and Fossdyke Wash and West Fen, in Lincolnshire, are upon record as former breeding-places; and to these might be added Winterton and Horsey in Norfolk, the neighbourhood of the Seven-Mile House, on the river Bure, near Yarmouth, and the Mere-lands at Thorpe, near Aldeburgh. In Scotland and Ireland the Avocet is regarded as an extremely rare bird. It has occurred accidentally as far north as Orkney, and as far to the south and west as Cork Harbour; but these must be considered quite exceptional instances. On the opposite shores of Holland, where I have had opportunities of seeing this singular bird alive and watching its graceful movements, large tracts of unreclaimed marsh and ooze still afford it a secure retreat, whilst the veto which is placed upon shooting during the nesting-season in that country enables it to rear its young in many places with more or less freedom from molestation.

In some of the marshy plains of Southern Spain the Avocet

is equally at home during the breeding-time ; but Mr. Howard Saunders, who has obtained the eggs there, states (Ibis, 1871, p. 387) that it does not appear to be numerous, since only a few pairs came under his own observation.

Dr. Cullen, referring to the present species, says the Avocet is rather a common bird in the Dobrudscha during the breeding-season. There it never nests in marshes, nor in weeds or grass, but always on the sand, mud, or shingle left dry, or nearly so, by the partial drying up or receding of the salt lakes or ponds. There are several of these in the neighbourhood of Kustendji, upon the shores of which the Avocet breeds.

The nest is usually a mere hollow lined with stems, straws and pieces of caked mud, but is frequently without any lining at all. Dr. Cullen once found some nests made completely of straws and stems built up to the height of six or eight inches. When undisturbed the bird invariably lays four eggs. These are of a warm stone-colour, handsomely blotched or streaked with black. Notwithstanding that the nest is generally in an exposed situation, it is not very easy to find ; for the bird never flies directly to or from it. It always runs crouchingly along the ground, with head bent low, for some little way before it takes flight, and in returning it invariably alights first at some distance, and approaches the nest in the same cautious way that it left it. It is a shy and restless bird, and betrays great uneasiness if its nest is approached or its young molested, often trying to entice the intruder away by feigning lameness or a broken wing. The young, which run as soon as they are hatched, are at first covered with white down, but marked on the head and shoulders like the old birds. Dr. Cullen says the bill is then quite straight ; but if so, it must very speedily acquire the characteristic curve ; for Mr. Gould, in his 'Birds of Great Britain' has figured the young three weeks old with unmistakably upturned bills ; and I have before me a young bird from Southern Spain, apparently about the same age, in which the bill is also very decidedly curved.

If the bill, however, were not straight at first, it would follow that the young must either feed immediately they are hatched, after the manner of their parents, or that the latter

must have some peculiar mode of supplying them with food. Insectivorous birds, as we know, feed their young by thrusting their own bills into the open mouths of the nestlings, while with Cormorants, as I have often observed, just the reverse takes place, the bill, and even the entire head of the youngster, sometimes disappearing in the capacious maw of the attentive parent. But in the case of the Avocets, neither of these modes can be adopted, owing to the peculiar curvature of the bill, unless, indeed, that of the nestling is straight; and it seems equally clear that the extremities of the mandibles are practically useless, since they are often so weak and attenuated that they do not even close one upon the other. I suspect it will be found that Avocets feed their nestlings as Puffins do; that is to say, they bring small fish, thin-skinned crustacea, and worms *crosswise* in their bills, and laying the latter close alongside the open mandibles of the young, allow them to snatch the food *sideways* from them.

The mode of feeding as observed in the case of adult birds is as remarkable as it is different from that of the majority of the Scolopacidae. Instead of boring into the soil, like the true Snipes, or feeding from the surface with the extremity of the bill, like the Sandpipers, the Avocet, resorting to the soft ooze, upon which it is well supported by its webbed feet, places the flattened convex mandible upon the surface of the mud, and by an alternating lateral motion of the head, scoops its food sideways into the mouth. Some interesting remarks on this subject, from the pen of Mr. A. E. Knox, will be found in the 'Zoologist,' vol i. p. 225.

Its webbed feet enable the bird to swim well, not only when wounded, and attempting to escape, but apparently for diversion; for a little flock of Avocets have been seen to alight upon a salt-water pool, where the water was known to be several feet deep; and Mr. Swinhoe, when at Amoy, once saw "a small group of pied birds floating in a clump" on the Chang-chow river, which subsequently proved to be Avocets*. On the wing they are equally at home, flying well and rapidly, with outstretched neck, while uttering a loud and tremulous note.

* Ibis, 1867, p. 400.

I have already referred to the wide geographical range of the present species ; and but for the above digression upon its habits, into which I was led from a consideration of Dr. Culen's remarks upon its mode of nidification in the Dobrudscha, I should have proceeded to trace its distribution beyond the European continent. There can be no doubt, from the seasons at which it has been noted by many observers on both shores of the Mediterranean, that it passes southwards and eastwards in the autumn, returning in an opposite direction in the spring. Thus, according to Mr. C. A. Wright (*Ibis*, 1864, p. 149), it has been met with in Malta and Gozo in spring and autumn. Lord Lilford met with it in Epirus in December. Mr. O. Salvin saw it at Zana and Djendeli in June ; but "at Chot Saboun, the eastern extremity of the marsh of Zana, the bird was most numerous." Canon Tristram found it at Tuggurt, south of the Atlas, in January. Drs. Finsch and Hartlaub, Mr. E. C. Taylor, Capt. Shelley (who saw it in February and March), and others bear testimony to its spending the winter in Egypt and Nubia* ; while Dr. Kirk and Dr. Hartlaub respectively affirm that it regularly visits the Zambesi region and Madagascar. Travelling down the west coast, in the same way, by Senegambia and Damaraland, where Andersson frequently shot specimens, it finds its way into Cape Colony, as we know from the observations of Dr. Andrew Smith, and the more recent investigations of Mr. E. L. Layard.

Andersson's note on this species, as furnished by Mr. J. H. Gurney in the 'Birds of Damara Land,' runs as follows :—
 "This handsome and peculiar bird is occasionally found on the south-west coast of Africa, and also occurs, though less frequently, inland. In the Cape Colony, however, I have found the case, as regards its distribution, slightly reversed. I may mention as inland localities for this species Objimbinque, where I have seen it once or twice, and Ondonga, where it was shot by Axel. At certain seasons the Avocet is not uncommon on the coast at Walvisch Bay, Sandwich

* Dr. Brehm believes that the N.E. African form may be distinguished as *Recurvirostra halebi* ; but in this opinion I cannot concur.

Harbour, Angra, Pequena, &c.; but it usually disappears from Damara Land during the breeding-season, though I have little doubt that a few pairs remain to nest there, as I have occasionally met with very young birds during the dry time of the year." Mr. E. L. Layard, writing in 1867, included this Avocet in his 'Birds of South Africa' as occurring periodically in the colony in small flocks, and mentioned Zeekoe Bay, on the Simon's Town and Wynberg road, Nel's Poort and Beaufort as localities where numerous specimens had been procured, among them several in very young plumage; but at that date he had not heard of their breeding there. That they do so, however, there is now no doubt; for he has since obtained the eggs there, and one of these, with which he kindly presented me, is now in my collection*.

Were I to attempt to indicate in detail all the localities in which the Avocet has been met with in Asia, I might say as much for that vast continent as has been said for Africa; but I should perhaps only weary my readers, and occupy too much valuable space. Suffice it to say that, according to Pallas, Radde, and other well-known authorities, the so-called European Avocet is met with in Siberia, Tartary, and Mongolia. Mr. Blanford shot a specimen in June at the Lake of Shiraz, but considers it rather a rare bird in Persia. Major St. John also procured specimens at the Lake of Shiraz and at the Lake of Dastarjin. Canon Tristram found it in Palestine; and the late Mr. J. K. Lord noticed it in Arabia.

In India there seems to be some difference of opinion as to its distribution in that country. Jerdon and Blyth both considered that it is not a common bird there, although the former naturalist has remarked ('Birds of India,' iii. p. 706) that it is "met with occasionally *throughout the whole country*,

* This is not the only instance of a species breeding in what is generally termed its "winter-quarters." Some interesting notes on this subject, in which other species are named, by Mr. Layard, Dr. Bree, and the late Mr. Blyth, will be found in the 'Field' for 1871. See also Burgess, P. Z. S. 1855, p. 23; P. Z. S. 1863, p. 288; Sharpe and Dresser, P. Z. S. 1870, p. 244; and Saunders, Ibis, 1871, p. 389.

frequenting the edges of tanks and rivers, generally in small flocks." To this statement, however, exception is taken by Col. Tickell, who says that, as far as his experience goes, the Avocet is "an exceedingly rare bird in India." He adds, "though I have pretty generally explored the Ganges between Sootee and Patna, the Gunduck and Bishennuddee in Tirhoot, the Bhagiruttee in Bengal, and the Mahanuddee in Malda, the Koel, Damoodur, Kasaie, and Soobunrekha, in the wilder tracts of Chota, Nagpoor, and Orissa, never have I met with this bird except in the tideway of the Hooghly below Calcutta, or in the mouths of the Roopnarain, near the sea, and never in any inland jheel, lake, or marsh." This last remark reads strangely; for Mr. Hume, writing on the ornithology of Sindh ('Stray Feathers,' i. p. 248), states that it is there very common about the larger inland lakes; and at the Muncher Lake especially, he noticed it in large parties, "certainly a hundred in a single flock." Mr. R. M. Adam, too, shot several specimens in March and April at the Sambhur Lake, in Central India ('Stray Feathers,' i. p. 397). Hodgson found it in Nepál. Père David, Mr. Swinhoe, Mr. Reeves, and others have observed the Avocet in China and Formosa; and Mr. Swinhoe regards it as a winter visitant to South China (P. Z. S. 1863, p. 311). It is included in Mr. Holdsworth's "Catalogue of the Birds of Ceylon" (P. Z. S. 1872, p. 475) on the authority of Mr. Layard, who, some years since, noted the occurrence of two specimens at Jaffna (Ann. & Mag. Nat. Hist. 2nd ser. vol. xiv. p. 265, 1854).

As regards *Recurvirostra leucocephala* of Vieillot (Nouv. Dict. d'Hist. Nat. iii. p. 103, and Gal. Ois. iii. p. 181, pl. 272), I have seen the type specimen in the Paris Museum, and can state that it is not an Avocet at all, but a young bird, with a broken bill, of the Australian Banded Stilt, *Cladorhynchus pectoralis* (Du Bus). It is easy to see how the mistake arose. Had the bill been perfect, Vieillot would have seen that it was not recurved; but having only the basal half before him, and, no doubt, observing the extreme *vertical* compression of the mandibles, erroneously assigned it a place among the true Avocets. The foot of *Cladorhynchus* is very small compared

with that of *Recurvirostra*; and although palmated as in that genus, like *Himantopus* it has no hind toe.

The identification of *Recurvirostra orientalis*, Cuvier, is a point which, I imagine, Indian ornithologists especially will be glad to have settled. Cuvier's very brief reference to the species which he thus named, Règ. An. i. p. 533 and note (1829), is as follows*:—After referring to *R. avocetta* and *R. americana*, he says, "Il y en a sur les côtes de la mer des Indes une troisième, toute blanche, à ailes toutes noires, à pieds rouges, *R. orientalis*, nobis;" adding in a foot-note, "M. Vieillot a changé ce nom en *Recurv. leucocephala*, Gal. pl. 272." Now *R. leucocephala*, Vieillot, as I have already pointed out, is the Australian *Cladorhynchus pectoralis* (DuBus); and there can be no doubt, from Cuvier's description and note, that his species was founded on the very same type in the Paris Museum from which Vieillot had described. This is confirmed by Guérin's plate in the 'Iconographie du Règne Animal,' tom. i. pl. 56, fig. 10 (1829–1844), where, allowing for the broken bill, incorrectly restored, the identity of *R. orientalis* with the Australian *Cladorhynchus* is placed beyond all doubt. I need scarcely add that Cuvier was mistaken in supposing that the bird in question came "from the shores of the Indian Ocean." It is confined entirely to Australia; and ornithologists may rest pretty well assured that there is but one species of Avocet in India, viz. *R. avocetta*†.

* [The bird is described and named in the edition of 1817.—Ed.]

† [The above identification of Mr. Harting's has already been anticipated by M. de Selys-Longchamps, whose views are given in his excellent 'Note sur la Famille des Recurvirostridées,' published in the Bulletin of the Académie Royale de Belgique, xvii. part i. p. 5 (1851).

The proper name of the Australian bird will therefore be

CLADORHYNCHUS LEUCOCEPHALUS (Vieillot).

Recurvirostra leucocephala, Vieill. N. D. iii. p. 103 (1816).

Recurvirostra orientalis, Cuv. R. A. i. p. 496 (1817).

Leptorhynchus pectoralis, Du Bus, Bull. Ac. Roy. Belg. ii. p. 419, t. 7 (1835); Mag. Zool. 1835, t. 45.

Cladorhynchus pectoralis, Gould, Birds Austr. vi. t. 26.

Himantopus palmatus, Gould, Handb. Birds Austr. ii. p. 248.

Cladorhynchus palmatus, G. R. Gray, List Gen. B. p. 69 (1840).—Ed.]

Mr. Swinhoe's *Recurvirostra sinensis* from Amoy, I think, must be referred to the present species. His description (*l. c.*) does not, indeed, apply to an adult specimen of *R. avocetta*, but, to my mind, clearly indicates the bird of the year, which differs chiefly from the adult in having the upper part of the back and tail light ashy grey, and the scapulars and wing-coverts edged with the same colour, or with white. He gives careful measurements of bill, wing, tarsus, &c., and some useful remarks on the trachea, gizzard, and intestines as noted by him on the dissection of specimens of both sexes.

RECURVIROSTRA AMERICANA, Gmelin.

Recurvirostra americana, Gmel. Syst. Nat. i. p. 693 (1788); Wilson, Am. Orn. vii. p. 126, pl. 63 (1813); Swainson, Faun. Bor.-Amer. ii. p. 375 (1831); Audubon, Orn. Biog. iv. p. 168 (1838); *id.* Birds Amer. vi. p. 24, pl. 353 (1843); Baird, Birds N. Amer. p. 703 (1858); Coues, Key N. Amer. Birds, p. 247 (1872).

Recurvirostra occidentalis, Vigors, Zool. Journ. iv. p. 356 (1829); *id.* Zool. Voy. 'Blossom,' p. 28, pl. xii. (1839); Cassin, Illustr. B. Californ. & Tex. p. 232, pl. xl. (1856); *id.* U. S. Expl. Exped. p. 324 (1858) *id.* Perry's Exped. Japan. ii. p. 246 (1856).

Hab. Temperate parts of North America, California, Mexico, Central America.

Diagn. *R. alba*; capite colloque ferrugineis colore antice ad pectus producto (ptil. æstiv.), aut albidis, nonnunquam cinerascentibus (ptil. hiem. & juv.), scapularibus nigris; tectricibus alarum et remigibus primariis nigris cineraceo limbatis; rostro nigro; iride rufescenti-fusca; pedibus cæruleis. Long. tot. circa 18 poll., rostr. 3·75, alæ 8·75-9·0, tib. nud. 1·9, tars. 3·75, dig. med. 1·75.

The present species appears to be pretty generally distributed throughout the temperate parts of North America, but is more abundant on the western coast. In the vicinity of Hudson's Bay, in the summer season, it was observed to be plentiful; and Nuttall found it breeding on the islands of shallow ponds throughout the Rocky Mountains. It is common on the Saskatchewan plains, where, according to Richardson and

Swainson, it frequents the shallow lakes, feeding on insects and small freshwater crustacea. In Oregon, California, and Texas it is equally numerous, as was ascertained by the U. S. Exploring Expedition under Peale and others. I have received several specimens of this bird from Mexico in full summer plumage; and Professor Spencer Baird has recorded its occurrence in Florida. Occasionally, says Mr. Cassin (*l. c.*), it is noticed on the coast of the Atlantic, sparingly north of New Jersey, but becoming more numerous southwardly. Audubon, in his 'Birds of America' (*l. c.*), has given an extremely interesting account, too long to be quoted here, of the breeding-habits of this bird as observed by himself between Henderson and Vincennes, in the State of Indiana; and this account is republished in his 'Ornithological Biography' (*l. c.*). Although *R. americana* has been met with in some parts of Central America, *e. g.* in Guatemala, where, if I mistake not, Mr. Salvin procured specimens*; it would appear to be somewhat rare there, and probably does not travel much further south. I know of no instance of its occurrence in any part of South America, although the Black-winged Stilt, *Himantopus nigricollis*, a bird of similar habits and affecting similar haunts, is found quite as far north and travels down to Brazil. The latter bird has been met with in Jamaica (Gosse) and the Galapagos Islands (Habel); but the former seems to be confined entirely to the continent of North America.

Giraud, in his account of the birds of Long Island, p. 269, says, "the habits of this bird are very similar to those of the Stilt, to which in form it has some resemblance. It is less frequent with us than the latter, and is not generally known to our gunners. It frequents the shallow pools in the salt marshes, and, like the Stilt, is sometimes seen wading breast-deep in pursuit of its favourite fare. A few breed at Egg Harbour, where they are called "Blue-stocking," their legs being of that colour. Its nest is built among the thick tufts of grass, usually near some favourite pool, making use of similar materials in its construction as the Stilt. The number

* [Cf. Salvin, *Ibis*, 1865, p. 192, et 1867, p. 198, where it is stated that this species was seen in some numbers at Chiapam on the Pacific coast of Guatemala.—ED.]

of eggs is also the same (four), which differ only in having the ground-colour dull olive, those of the Stilt being of a yellowish-clay colour blotched with black." The food of the American Avocet consists chiefly of insects and small crustacea. The stomachs of several specimens examined by Swainson contained fragments of the latter mixed with gravel. Like the various species of *Totanus*, it is a very noisy bird; and, uttering cries of distress, it flies towards any one who may invade its haunts. The females have the colour of the head and neck in summer much paler than the males, and approaching to a buff orange, while the scapulars are browner. In winter the head and neck in both sexes are white; in the adult, in autumn, and in birds of the year, the same parts are grey or greyish white. There can, I think, be little doubt that *R. occidentalis*, Vigors, was founded upon examples of the present species, procured at San Francisco, in the latter plumage. Prof. Spencer Baird and Dr. Elliott Coues are certainly of this opinion*, although their views were not shared by the late Mr. Cassin. Vigors's original description in the 'Zoological Journal' runs as follows:—"Recurv. dorso, corpore infra, remigumque secundariarum apicibus albis; capite, collo supra, caudaque pallidissimè griseis; remigibus nigris. Rostrum pedesque nigri. Longitudo corporis 18, rostri 4, alæ a carpo ad remigem primam $7\frac{1}{2}$, caudæ $3\frac{1}{2}$, tarsi 4."

In the 'Zoology of the Voyage of the 'Blossom,' published ten years later, the same naturalist again described the bird, adding the remark that it differs from our European species in the absence of the black markings on the head and nape; and from the Indian species, *R. orientalis*, by the greyish colouring of the head and upper part of the neck, as well as by the fascia on the wings, and the black colour of its legs"†.

* See also Peale, Expl. Exped. *l. c.*

† The colour of the legs, erroneously stated to be black, must have been so described from dry skins. The delicate pale bluish grey of those parts fades very rapidly after death. In two specimens of *R. avocetta* which I skinned on the 13th April last, this beautiful colour had changed to black before the end of the month.

Between the date of Mr. Vigors's description above quoted (1829) and the publication of Mr. Cassin's excellent 'Illustrations of the Birds of California, &c.' in 1856, in which the bird in question is figured (pl. 40), no observations seem to have been recorded to impugn the validity of the so-called species, Mr. Cassin remarking that, since the date first mentioned, it had been "again noticed *only* by Col. McCall and Dr. Heermann, both of whom, however, represent it as being by no means a rare bird." Dr. Heermann found it in various parts of California, and procured numerous specimens, which are now in the National Museum, Washington, and in the Museum of the Philadelphia Academy. He observed it resorting to shallow pools, in which it waded breast deep, usually finding on the soft muddy bottom a plentiful feast of insects and snails." "Although partially web-footed," he adds, "it does not swim, so far as I have noticed, unless wounded, when it takes immediately to the deep water, swimming with great celerity, soon getting beyond range if not at once disabled by a second shot." "I have noticed this bird in abundance," he continues, "on the borders of the reedy swamps which cover a large portion of the lower part of the Sacramento valley."

The observations of Col. McCall upon this species, as published by Mr. Cassin in the work to which I have referred, are particularly interesting; and, indeed, without reference to them the present notice would scarcely be complete. He says:—"At the village of San Elizario, 22 miles south of El Paso, on the 16th October, 1851, I found small flocks of the Western Avocet feeding along the banks of the Rio Grande, and frequenting the sloughs and pools in its vicinity, whilst moving to the south in the course of their regular autumnal migration. They were tame and unsuspicious, and evidently ignorant of the destructive character of the gun; for its report seemed to create little alarm, even when the discharge carried death into their ranks. To illustrate this I need only mention the fact that the first flock which came immediately under my observation alighted within twenty yards of the piazza where I was sitting, on the morning after my arrival. They waded

at once into the shoal water of a 'cut-off' from the river, which passed immediately in front of the house, and began to feed. I was near enough to see them immerse their bills into the water; and search the soft mud below for their prey; and as they, from time to time, were scattered, and again assembled in a group, I had ample time and an excellent opportunity to note their manner of feeding. I was soon satisfied that their habits in this respect did not differ from those of *R. americana*, which I had previously seen in great numbers, and closely observed on the borders of the Ozo river, in southern Texas. After watching them for some time, I took my gun, and at a single discharge secured five of the dozen that composed the flock. The remainder flew the distance of a stone's throw, and, alighting in shoal water, began to feed again without appearing to notice the loss of their companions. I followed them, and in a few minutes procured three more within one hundred yards of the house. During that day, and several successive days that I remained at the post, I saw flocks of from six to ten on their feeding-grounds, both morning and afternoon. I shot them, as well as Ducks and Snipe, daily; and at no time that I recollect had I any difficulty in approaching within easy gun-shot.

"A few days previously I had seen a very large flock of these birds near Val Verde, some 170 miles further up the river. This flock contained fifty or sixty birds; they rose near me as I fired at a flock of Teal, and circled round in very compact order, presenting the beautiful contrast of their white and black markings, and at length settled on the opposite side of the pond, where they were beyond pursuit. The occasions here mentioned are the only ones on which I have met with *R. occidentalis*.

"On the wing the flocks were usually closely compacted; the flight was buoyant, and with little exertion of muscular force."

RECURVIROSTR^A~~S~~ ANDINA, Philippi & Landbeck.

Recurvirostra^A*andina*, Philippi & Landbeck, Wieg. Arch. 1863, p. 131.

Hab. Paruncota, in the Andes.

Diagn. R. alba ; capite, collo, pectore, abdomine, subalaribus et crisso, dorso et uropygio pure albis ; scapularibus, interscapuliis, alis et cauda fusciscenti-nigris ; rostro nigro ; iride coccinea ; pedibus cæruleis : long. tot. circa 18·9 poll., rostr. 3·2, alæ 9·6, tib. nud. 1·3, tars. 3·4, dig. med. 1·7.

The above diagnosis I have prepared from the description given by Herren Philippi & Landbeck. Translated from the German, the brief account which they give of the bird is as follows :—

“Head and neck white ; mantle, wings, and tail black ; feet bluish grey.

“The wings do not quite reach to the end of the tail. The tibia is bare for 1·3 inch. The bill is horn-black at the extremity, graduating into horn-brown. Iris bright red. Tarsus bluish grey ; claws black. Head, neck, breast, belly under wing- and under tail-coverts, lower part of back and rump, flanks and thighs, pure snowy white. Upper part of back, shoulders, wings, tail, and upper tail-coverts brownish black ; the greater wing-coverts and primaries with greenish black reflections, *but without any white.*”

They add, “this pretty Avocet, which cannot be mistaken for any other species, was obtained by the late Herr Froben, of Arica, at a lake at Paruncota, in the Andes, 16,000 feet above the sea-level, and only one specimen procured in June 1863. The birds were very shy, and the air so cold and thin, that collecting there was attended with great difficulty.”

As I have already stated at the commencement of the present article the reasons which have led me to regard *R. andina* as a good species, I need only remark, in addition, how extremely desirable it is that the attention of ornithologists in South America should be directed towards its rediscovery, with a view to ascertain its geographical range and something more than its original discoverer has been able to supply from the acquisition of a single specimen.

RECURVIROSTRA NOVÆ-HOLLANDIÆ, Vieillot.

Recurvirostra novæ-hollandiæ, Vieillot, N. D. d'hist. nat. iii. p. 103 (1816) ; Buller, Birds N. Zealand, p. 201 (1872).

Recurvirostra rubricollis, Temm. Man. d'Orn. ii. p. 592 (1820); Lesson, Traité d'Orn. p. 592 (1831); Gould, Synops. B. Austr. pt. ii. (1837); B. Austr. fol. vi. pl. 27; Handb. B. Austr. ii. p. 249 (1865); Schlegel, Mus. Pays Bas (Scolopac.), p. 104 (1864); Gray, Ibis, 1862, p. 237; Hand-list, iii. p. 47 (1871); Downing, Proc. Roy. Soc. Tasmania, vol. iii. pt. 2; Ibis, 1861, p. 119.

Avocetta novæ-zealandiæ, Ellman. Zoologist, 1861, p. 7470.

Hab. Australia, Queensland, New South Wales; Tasmania (Rev. T. J. Ewing); Norfolk Island (Downing); New Zealand (Buller, Ellman).

Diagn. *R. alba*: capite et colli dimidio superiore castaneis, hoc colore antice ad pectus producto; scapularibus ex parte, tectricibus alarum et remigibus primariis nigris; rostro nigro; iride rufescenti-fusca; pedibus cæruleis: long. tot. circa 18·5 poll.; rostr. 3·5; alæ 8·6-9·2; tib. nud. 1·75; tars. 3·2; dig. med. 1·5-1·8.

The Red-necked Avocet, which is perhaps the most beautiful of the four known species, chiefly inhabits Australia, and is there confined, for the most part, to the western and southern portions of that country, although I have received specimens and seen others from Queensland. Mr. Gould did not meet with it himself during his rambles in New South Wales, but has now and then seen it in collections from those parts; and there is a specimen thence in the Leiden Museum.

Like other species of the genus, "it frequents," says Mr. Gould, "the shallow parts of lakes, inlets of the sea, and the muddy banks of the rivers, often wading knee-deep in the water, and readily swimming when necessity requires it so to do. Its food consists of minute marine mollusca and insects, which it gathers from the surface of the mud with its delicately organized bill, the structure of which is admirably adapted for the purpose. In Western Australia the favourite localities of this bird are the lakes in the neighbourhood of Perth and on Rottne Island, where it is seen in small flocks in company with *Himantopus leucocephalus*. In South Australia the river Murray and the shores of Lake Alexandrina afford situations equally adapted for its existence."

"The sexes," he continues, "are alike in plumage, and differ but little in size;" and to this I may add that, so far as I have been able to judge from numerous specimens received at different times from various parts of Australia, the red or, rather, chestnut colour of the head and neck is retained throughout the year, though it becomes paler in the winter.

We are at present without information as to its breeding-habits; but its mode of nesting and the number and colour of its eggs are no doubt very similar to those of its better-known congeners.

The Rev. Mr. Ewing, in his "List of the Birds of Tasmania," published in the 'Proceedings' of the Royal Society, Tasmania, includes the Red-necked Avocet amongst the wading birds found there; and Dr. Downing, in an article "On Norfolk Island," published in the same 'Proceedings,' refers to a single specimen of this bird which had been procured at that lonely spot a year or two previously*.

Regarding its occurrence in New Zealand, Mr. Buller writes as follows:—"In the summer of 1859-60, I saw a small flock of them far up the course of the Ashburton River, and again in a small lagoon near the township of Timara, but not having a gun with me I was unable to secure any. In the same season a specimen was shot by Mr. French on the tidal flats near the mouth of the Kaiapoi river, and this, unfortunately, was allowed to perish. Three years later I met with a flock, numbering five or six, on the south-west of the Wellington province. They were very shy, rising high in the air on my attempting to approach them, and taking their course for the opposite side of Cook's Strait. Two specimens have been shot on the ocean-beach near Dunedin; and Dr. Richardson received another from the Whakatipu Lake, in the interior of the Otago province. A solitary one was shot on the mud-flats near Whangarei some years ago, and the skin was preserved by Mr. George Burnett, who forwarded it to Europe." The specimen from which Mr. Buller's description was taken was killed on the mud-flats near Christchurch, Canterbury settlement, in 1864, and forwarded to him by Dr. Haast for

* See also Ibis, 1861, p. 119.

determination. Since that date a zealous investigation of the avifauna by observers in New Zealand has resulted in the acquisition of further specimens of this very handsome bird.

XXIX.—*Remarks on some Typical Specimens of the Trochilidæ, with a Description of one new Genus.* By D. G. ELLIOT, F.L.S., F.Z.S., &c.

HAVING lately received from the Vienna Museum, through the kindness of Herr von Pelzeln, several of his types of various species of the Trochilidæ for examination, I thought it would interest those ornithologists who pay especial attention to those beautiful birds, if I should place on record the results of my investigation, both as regards the specific value of these specimens, and their proper place in the family.

The first I shall refer to has been described by Herr von Pelzeln in his 'Ornith. Brasil.' p. 57, as *Thalurania iolæma*. In our article on this genus, published in 'The Ibis' for 1873, p. 361, Mr. Salvin and I placed this bird among those species which we had not seen, and of whose specific value we could therefore give no opinion. Having now received the type, I find it has nothing whatever to do with *Thalurania*, but more properly should be placed in a new genus, having its nearest ally in *Smaragdochrysis*. I therefore propose for this bird the generic term of

PTOCHOPTERA.

Bill moderately long, straight, sharply pointed. Wings extremely short, a little over one third the entire length of the bird. Tail long, deeply forked, feathers narrow, outer ones curving slightly inwards.

The extremely short and feeble wing, in comparison with the size of the bird, is remarkable. The species may be briefly described as follows :—

PTOCHOPTERA IOLEMA.

Top of head and nape dull dark green, entire upper parts grass-green, only slightly metallic. The tail-coverts are